

**YOU & MATHS** Find the horizontal line Find the values of  $a$  such that the line

$$(2a - 1)x + (3 - 6a)y + 8 - 3a = 0$$

is parallel to the  $x$ -axis.

The lines parallel to the  $x$ -axis have the general equation:

$$y = k.$$

Since  $(2a - 1)$  is the coefficient of  $x$  in the equation, we must impose the condition

$$(2a - 1) = 0,$$

which implies that  $a = \frac{1}{2}$ .

We substitute the value  $a = \frac{1}{2}$  in the equation and we obtain

$$(3 - 3)y + 8 - \frac{3}{2} = 0 \rightarrow \frac{13}{2} = 0,$$

which is false.

This means that it is impossible to find a line with the requested property.